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A NEW PLETHODONTID SALAMANDER (GENUS
MAGNADIGITA) FROM THE CORDILLERA
OCCIDENTAL OF COLOMBIA

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The presence in collections of representatives of several undescribed species has been revealed during the preparation of a review of South American salamanders (family Plethodontidae). Although the study is still in progress, it seems advisable to describe at this time a species that is apparently the lone representative of the genus *Magnadigita* on the South American continent. The new species is of obvious northern affinities and has no close relatives among South American forms. The species is known only from a high elevation on Páramo Frontino, a highland plateau in the Cordillera Occidental of Colombia. In allusion to the fact that it occurs at a higher elevation than any other member of the genus, and at an altitude exceeded by only one or two other plethodontid salamanders, it may be known as:

Magnadigita hypacra, new species

Holotype: United States National Museum 131481; an adult female from Páramo Frontino, 11,850 feet (3,610 meters), DEPARTAMENTO DE ANTIOQUIA, COLOMBIA, collected 18 August 1951, by M. A. Carriker, Jr. The species is known from the unique holotype.

Diagnosis: A plethodontid salamander referred to the genus *Magnadigita* on the basis of absence of a sublingual fold, presence of subdigital pads on the tips of truncate unflattened phalanges, and the incomplete webbing of hands and feet. A medium-sized species (62.0 mm snout-vent length); head of moderate length and width; eyes and upper eyelids moderate; moderate number of maxillary, large number of dentary, and small number of vomerine teeth; tail length moderate, shorter than body; hands and feet narrow, webbing reduced, with corresponding great freedom of digits. Coarse dorsal speckling of yellow-buff on dark brown ground color; large yellow spots scattered sparsely over lateral surfaces of body and ventral surfaces of tail and body.

Magnadigita hypacra is distinguished from all other South American salamanders by the near absence of webbing of hands and feet; from the *Magnadigita subpalmata* group (including *pesrubra* and *torresi*) of Costa Rica, in having larger adult size, fewer maxillary and vomerine teeth, and larger eyelids; from *Magnadigita cerroensis* of Costa Rica, in having a different color pattern, more maxillary and dentary teeth, and smaller hands and feet; from the recently described *Magnadigita marmorea* from el Volcán de Chiriquí (Volcán Baru), Panamá (Tanner and Brame, 1961), in having a different color pattern, fewer vomerine teeth, shorter hind limbs, smaller hands and feet, and a smaller head.

Description of Holotype: Adult female, vent walls folded, hedonic glands absent. Snout truncate in dorsal and lateral view; nostril small, labial protuberances moderate for female; canthus moderately rounded, not well developed. Snout-vent length 7.0 times head width; snout-vent length 4.7 times snout-gular length. Horizontal groove extends posteriorly from eye 2.6 mm, then proceeds ventrally to mandible, becomes shallow and less obvious, extends across gular area parallel to gular fold at point 6.2 mm anterior to fold. Gular fold continuous across gular area, extending dorsally as groove, then proceeding anteriorly and mesially to dorsal midline. Small gular grooves paralleling the mandibular rami faintly indicated. No sublingual fold, tongue boletoid. Vomerine teeth 10 on left, 9 on right side, extending slightly more than one choanal diameter from lateral choanal border toward maxilla. Maxillary teeth 26 on left, 22 on right side, extending posteriorly to level of center of eyeball. Four premaxillary teeth, none piercing lip ridge. Dentary teeth (both sides) 74. Well defined costal grooves, 13 on each side including one each in axilla and groin; caudal grooves 26. Tail 0.85 times snout-vent length; moderately constricted at base with moderate lateral compression throughout. Post-iliac gland not evident. Limbs of moderate length; when appressed to sides of trunk two costal folds remain uncovered; snout-vent length 4.7 times right fore limb; snout-vent length 4.4 times right hind limb. Webbing of hand slight; first finger completely in web; finger two, with one and one-half phalanges free of web; finger three, with two and one-quarter phalanges free of web; finger four, with one phalanx free of web. Webbing of foot slight; toe one completely in web; toe two, with one and one-half phalanges free of web; toe three, with slightly over two phalanges free of web; toe four, with two phalanges free of web; and toe five, with one phalanx free of web. Well developed finger and toe pads at tips. Fingers in order of decreasing length: 3,2,4,1; toes in order of decreasing length: 3,4,2,5,1.

Measurements (in mm): Head width 8.7; snout-gular fold 13.0; head depth at posterior angle of jaw 4.6; eyelid length 4.0; eyelid width 1.9; anterior rim of orbit to snout 3.1; horizontal orbital diameter 3.0; interorbital distance 3.0; distance between vomerine teeth and parasphenoid tooth patch 0.8; snout to fore limb 16.9; distance separating internal choanae 2.1; internarial distance 2.9; snout projection beyond mandible 0.8; snout-posterior angle of vent 62.0; snout-anterior angle of vent 59.0; axilla-groin length 34.0; tail length 51.5; tail width at base

3.5; tail depth at base 4.4; fore limb length 13.3; hind limb length 14.0; width of right hand 5.1; width of right foot 6.2.

Coloration: Over-all dorsal coloration dark; dorsal ground color very dark brown with coarse speckling of yellow, yellow-buff, to yellow-orange; speckling effect may be due to absence of pigment; light coloration lends vermiculated appearance to head and portions of dorsum and tail; large yellow spots on lateral surfaces, but are sparse and scattered; a few large yellow spots extend onto venter; tail sparsely spotted with yellow laterally and ventrally; gular region spotted with yellow. Lateral and ventral yellow spotting apparently due to presence of yellow pigment. Limbs mottled with yellow spots, but ground color dark. Venter lighter than dorsum, over-all appearance gray-brown with exception of tan gular region; ventral melanophore pattern reticulate under magnification.

Relationships: The closest allies of *Magnadigita hypacra* are found among the *Magnadigita* of Panamá and Costa Rica, rather than with any South American plethodontid salamander. The new form resembles the recently described *M. marmorea* (Tanner and Brame, 1961) from el Volcán de Chiriquí, Panamá, in general body proportions and numbers of maxillary and dentary teeth. The color pattern, the low number of vomerine teeth, the shorter limbs, the smaller head, and the size and shape of the hands and feet readily distinguish *M. hypacra* from *M. marmorea*. Similarities between *M. hypacra* and the *M. subpalmata* group are evident in head-body proportions, size and dimensions of hands and feet, and limb length. *M. hypacra* has fewer teeth, proportionately larger eyes, and apparently is a larger species than either *M. subpalmata* or its close relatives, *M. pesrubra* and *M. torresi*. Although *M. hypacra* and *M. cerroensis* share similar adult size and numbers of vomerine teeth, the new form has more maxillary and dentary teeth, shorter hind limbs, different head proportions, different shape of hands and feet, and a different color pattern than *M. cerroensis*. There is little or no indication of relationship to *M. nigrescens*, a small form known only from the unique holotype, or to *M. robusta*, a very large and distinctive form.

Magnadigita hypacra appears to be more closely related to *M. subpalmata* and *M. marmorea* than to any other known forms. The possibility of a relationship to *M. cerroensis* is also indicated by the presence of several common characters in the two species.

Remarks: The genus *Magnadigita* is represented in southern Central America and South America by eight nominal species: *M. nigrescens*, known only from the type locality in Costa Rica; *M. robusta*, known from Costa Rica and Panamá; *M. cerroensis*, known from Costa Rica; *M. subpalmata*, known from Costa Rica and Panamá; *M. pesrubra* and *M. torresi*, known from southern Costa Rica; *M. marmorea*, known only from el Volcán de Chiriquí, Panamá; and *M. hypacra*, known only from Páramo Frontino, Colombia. These species are separated geographically from the *Magnadigita* to the north, since no *Magnadigita* are known from Nicaragua. With the exception of *Magnadigita hypacra* and the



FIG. 1. Map of northern South America and southern Central America indicating locations of highlands species of *Magnadigita* on el Volcán de Chiriquí, Panamá (*M. marmorea*), and Páramo Frontino, Colombia (*M. hypacra*).

Oedipina of Ecuador and Colombia, it appears that all known South American salamanders are assignable to the genus *Bolitoglossa*.

In contrast to *Bolitoglossa*, which occurs from sea level to great elevations, the southern species of *Magnadigita* exist only at moderate to great elevations. The geographic location of the southern highland populations of *Magnadigita* is indicated on the accompanying map (Fig. 1).

Nothing is known of the habitat of *M. hypacra*, but it presumably was collected in the páramo (alpine grassland) zone. It seems likely that the species occurs under rock rubble in moist situations in regions of dwarf vegetation. Other southern *Magnadigita* are found in similar situations at high elevations. Reduced webbing in *Magnadigita* appears to be correlated with a more terrestrial existence than for the almost fully webbed species of *Bolitoglossa*.

The name *hypacra* is derived from the Greek, *hypo* (less than, almost) and *akros* (highest).

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LITERATURE CITED

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